

Claims:

1. A method for producing calendered paper or board, comprising

- forming a base web from the mixture of water and pulp supplied from the headbox and drying the web by pressing and heating, and
- calendering the web at least once for modifying its surface at least on one side,

characterized by

- standardizing the cross-direction thickness profile of the web prior to the calendering step, and
- calendering the web by means of at least one long-nip calender.

2. The method of claim 1, **characterized** by standardizing the thickness profile of the web by diluting in a profiled manner the mixture of water and pulp supplied from the headbox.

3. The method of claim 1, **characterized** by standardizing the thickness profile of the web by steaming the web in a profiled manner during pressing.

4. The method of claim 1, **characterized** by standardizing the thickness profile of the web by pressing the web in a profiled manner.

5. The method of claim 1, **characterized** by standardizing the thickness profile of the web by heating it in a profiled manner.

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6. The method of claim 1, **characterized** by standardizing the thickness profile of the web by cooling the web in a profiled manner.

7. The method of claim 1, **characterized** by standardizing the thickness profile of the web by wetting it in a profiled manner.

8. The method of claim 7, **characterized** by standardizing the thickness profile of the web by wetting the web in a profiled manner by means of a film transfer coater or a spray coater.

9. The method of claim 1, **characterized** by standardizing the thickness profile of the web by treating the web by means of a machine calender prior to the final calendering step.

10. The method of claim 9, **characterized** by standardizing the thickness profile of the web by treating the web by means of a zone-adjusted machine calender prior to the final calendering step.

11. The method of claim 1, 9 or 10, **characterized** by precalendering the web, coating the web with at least coating layer and calendering the web at least once by means of a long-nip calender.

12. The method of claim 11, **characterized** by using a precalender having a nip length of less than 50 mm, a nip pressure of 50 MPa at the most, and a thermoroll temperature of 80 to 300 °C, and a long-nip calender having a nip length of 30 to 280 mm, a nip pressure of 1 to 12 MPa, a thermoroll temperature of 100 to 300 °C, and a calender belt hardness of 80 to 100 ShA.

13. The method of claim 1, **characterized** by measuring the

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thickness profile of the web at least at one point over the length of the machine prior to long-nip calendering.

14. The method of claim 13, **characterized** by measuring the thickness profile at least immediately before long-nip calendering and preferably at least at one point before the last actuator acting on the thickness profile.

15. The method of claim 1, **characterized** by taking the web to the long-nip calender directly from the paper or board machine.

16. The method of claim 1, **characterized** by winding the web onto a storage roll prior to long-nip calendering.

17. The method of claim 1, **characterized** by standardizing the thickness profile of the web by using at least two of the following methods, headbox dilution adjustment, profiling steaming over the press section, profiling press, profiling drying, profiling cooling, profiling wetting, machine calendering, and profiling machine calendering.

18. An arrangement for manufacturing calendered paper or board, comprising

- a headbox for forming a base web from a mixture of water and pulp fed from the headbox,
- means for removing water from the web by pressing,
- means for drying the web by heating, and
- at least one calender for modifying at least one side of the web,

characterized by

- means arranged before the calender in the travel direction of the web for standardizing the cross-direction thickness profile of the web before calendering, and

- at least one long-nip calender for treating the web having a standardized thickness profile.

19. The arrangement of claim 18, **characterized** by a dilution-adjusted headbox.

20. The arrangement of claim 18, **characterized** by means for profiled steaming of the web arranged in connection with the means for removing water from the web by pressing.

21. The arrangement of claim 18, **characterized** by adjustable means for standardizing the thickness profile of the web for standardizing the thickness profile of the web by pressing the web in a profiled manner in connection with the removal of water.

22. The arrangement of claim 18, **characterized** by means for standardizing the thickness profile of the web by drying it by heating in a profiled manner.

23. The arrangement of claim 18, **characterized** by means for standardizing the thickness profile of the web by cooling the web in a profiled manner.

24. The arrangement of claim 18, **characterized** by means for wetting the web in a profiled manner.

25. The arrangement of claim 24, **characterized** by a film transfer coater or a spray coater arranged before the long-nip calender for profiled wetting of the web.

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26. The arrangement of claim 18, **characterized** by a machine calender for treating the web prior to the final calendering step.

27. The arrangement of claim 26, **characterized** by a zone-adjusted machine calender for treating the web prior to the final calendering step.

28. The arrangement of claim 18, 26 or 27, **characterized** by at least one precalender, at least one coater for coating the web with at least one coating layer, and at least one long-nip calender.

29. The arrangement of claim 28, **characterized** in that the precalender has a nip length of below 50 mm, a nip pressure of 40 MPa at the most, and a thermoroll temperature from 80 to 300 °C, and the long-nip calender has a nip length of 30 to 280 mm, a nip pressure of 1 to 12 MPa and a thermoroll temperature of 100 to 300 °C, as well as a calender belt hardness of 80 to 100 ShA.

30. The arrangement of claim 18, **characterized** by means for measuring the thickness profile of the web at least at one point before long-nip calendering over the length of the machine.

31. The arrangement of claim 30, **characterized** by means for measuring the thickness profile at least immediately before long-nip calendering and preferably at least at one point before the last actuator acting on the thickness profile.

32. The arrangement of claim 18, **characterized** in that the long-nip calender is arranged directly after the paper or board machine.

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33. The arrangement of claim 18, **characterized** by a reeler for reeling up the web onto a storage roll before long-nip calendering.

34. The arrangement of claim 18, **characterized** by at least two devices included in the following group: dilution-adjusted headbox, profiling steamer over the press section, profiling press, profiling dryer, profiling cooler, profiling wetter, machine calender and profiling machine calender.

Abstract